

Applicant

Facility ID / Permit #

Tennessee Department of General Services

19-0114-02/970454P

Emergency Engine > 560 kW power output (approximately > 751.1 HP)

Power output **985.0** HP (max **1,898** HP to be insignificant, max **2407.5** HP to stay under 10 tpy for fees, max **3000** HP for 40 CFR 89.112 applicability)

conversion 0.7457 kW/HP AP42, appendix A
 Power output **734.5** kW

Heating value 137,000 Btu/gal AP42, appendix A
 BSFC 7,000 Btu/HP-hr average brake-specific fuel consumption (BSFC), AP42, Table 3.3-1
 Heat input **6,895,000** Btu/hr
 Fuel use rate **50.328** gal/hr

(2007+ model year)

Allowable emissions, Tier 2, 40 CFR 89.112

Pollutant	Standard (gm/kW-hr)	Emissions (gm/hr)	Emissions (lb/hr)	Emissions (tpy)
PM	0.2	146.9029	0.32	0.08
NMHC + NOx	6.4	4700.8928	10.36	2.59
CO	3.5	2570.80075	5.67	1.42

1 lb = 453.592 gm

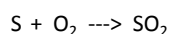
General equation: Emissions (gm/hr) = Standard (gm/kW-hr) * Power output (kW)

Convert to lb/hr: Emissions (lb/hr) = Emissions (gm/hr) * Conversion factor (1 lb/453.592 gm)

Annual PTE: Emissions (tons/yr) = Emissions (lb/hr) * Conversion factor (1 ton/2000 lb) * Operating time (500 hr/yr)

For SO₂, 15 ppm maximum sulfur content of fuel. Assume all sulfur converted to SO₂

Every mole of sulfur will create one mole of sulfur dioxide



fuel use rate (gal)	7.05 lb	15 lb S	mol S	mol SO ₂	64.066 lb SO ₂	0.0106338 lb/hr SO ₂
hr	gal	10 ⁵ lb fuel	32.065 lb S	mol S	mol SO ₂	
	density	from NSPS	lb sulfur converted to SO ₂			